



IN THE UNITED STATES PATENT & TRADEMARK OFFICE

AMENDEMENT

IN CLAIMS:

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ORIGINALLY FILED CLAIMS (1-15)

1. A shoring system comprising:
 - a) linear rails having opposing sides, each said opposing side having an outer guide running along entire length of said linear rail and an inner guide running partially from the bottom up, each said outer guide and said inner guide being adapted to interlock shoring panels sliding vertically within, each said linear rail further comprising lengthwise an external edge guide.
 - b) corner rails having oblique opposing sides, each said oblique opposing side having an outer guide running along entire length and an inner guide running partially from the bottom up, each said outer guide and said inner guide being adapted to interlock shoring panels sliding vertically within.
 - c) at least one strutting assembly comprising a horizontal spreader and two vertical members, wherein each said vertical member is adapted to cooperatively engage said edge guide of said linear rail and slide relatively.
 - d) shoring panels of equal design having laterally on either end an edge guide to interlock but slide vertically within said outer guide and said inner guide of said linear rail and said corner rail.
2. The shoring system of claim 1 wherein said linear rail has a lower section and an upper section, said lower section being defined by the length of said inner guide covering 30% to 75% of total length of said linear rail and said upper section being defined as complementary to said lower section, such that:

said upper section comprising a back flange to press against wall of excavation, and a narrower front flange holding perpendicularly in between two identical lateral flanges spaced apart at distance comparable to but inferior than width of said front flange creating a particular box beam that has the back and front side projecting oppositely outward from lateral flanges;

said lower section comprising said back flange and said front flange as per definition in said upper section, and said lateral flanges narrower than in upper section, said lower section further comprising an intermediary flange of practically same width as said back flange and at least two strips, said intermediary flange being weld on one side onto said lateral flanges and on the other side, via two said strips onto said front flange, said strips

being in alignment of said lateral flanges such that said front flange forms an edge guide frontally outward of said linear rail;

each said lateral flange having at distance quasi equal from said back flange and said intermediary flange a U-shaped member oriented with open section facing said lateral flange, said U-shaped member being weld parallel to said back flange and intermediary flange shaping respectively said outer guide and said inner guide;

said back flange having a locking bar of round or rectangular section, welded onto each lip, interior to said outer guide, to interlock said shoring panels sliding within outer guide, said locking bar being total or partial to said outer guide;

said U-shaped member having, interior to said inner guide, a locking bar to interlock shoring panels sliding within said inner guide, said locking bar being total or partial relative to inner guide.

3. A linear rail as set forth in claim 2 wherein rectangular structural tubes replace said U-shaped members.

4. The shoring system as set forth in claim 1, wherein said corner rail comprises:

a back flange to press against the wall of excavation and two identical structural channels held oppositely with their respective flanges looking outward, said back flange and each respective web of said structural channels being joined together to shape three faces of a hollow elongated polyhedron whose cross section is an isosceles triangle wherein the base is represented by said back flange, the legs by respective webs of said structural channels and the vertex angle taking any values between 15 and 90 degrees;

each said structural channel having a U-shaped members and a locking bar, said U-shaped member being oriented with the open section facing said structural channel and welded parallel to at equal distance from respective flanges of said structural channel shaping thereby said outer guide and said inner guide with respectively rear and front flanges of said structural channel, said locking bar being weld onto the lip of rear flange of said structural channel, interior to said outer guide, to interlock said shoring panels sliding within, said locking bar being total or partial to said outer guide,

each U-shaped members having, interior to said inner guide, a said locking bar to interlock said shoring panels sliding within, said locking bar being total or partial relative to said inner guide.

5. A corner rail as set forth in claim 4, wherein a rectangular tube is used instead of said U-shaped member.
6. A corner rail as set forth in claims 4 further including a reinforcing flange welded between flanges of respective said structural channels farthest from said back flange.
7. A corner rail as set forth in claims 4 further including an edge guide, said edge guide being adapted onto flanges of said structural channels farthest from said back flange.
8. A corner rail as set forth in claims 6, wherein at said upper section, the flange of each said structural channel farthest from said back flange is cut close to its web to facilitate the insertion of panels within said inner guide.
9. A corner rail as set forth in claim 4, wherein:

at said upper section said structural channels are replaced by structural angles, said structural angle being oriented in alignment of said structural channels present in lower section of said corner rail, said upper section further comprising a front flange, said front flange joining on either end respective leg of each said structural angle, said upper section further including said U-shaped member and said locking bar as per their definition set forth in claim 4.
10. A shoring system comprising:
 - a) mono-guide linear rails having opposing sides, each said opposing side having one guide, said guide being adapted to interlock said shoring panels sliding vertically within, each said mono-guide linear rail further comprising lengthwise an external edge guide, said external edge guide may be total or partial relative to the length of said mono-guide rail.
 - b) mono-guide corner rails having oblique opposing sides, each said oblique opposing side having a guide, said guide being adapted to interlock shoring panels sliding vertically within.
 - c) at least one strutting assembly comprising a horizontal spreader and two vertical members, wherein each said vertical member is adapted to cooperatively engage said edge guide of said mono-guide linear rail and slide relatively.
 - d) shoring panel, said shoring panel having laterally on either end an edge guide to interlock but slide vertically within said guide of said mono-guide linear rail and said mono-guide corner rail.

11. A shoring system as set forth in claim 1, wherein the strutting assembly comprising said horizontal spreader and vertical members such that:
- each said vertical member consisting of two identical lateral plates held parallel at upper and lower ends respectively by an upper plate and a lower plate, a supporting plate welded laterally on one end of said lateral plates, and an inner plate welded in between said lateral plates; said lateral plates projecting outward past said inner plate to shape a guide channel to cooperatively slide over said edge guide of said linear rail, each said lateral plate having further a strip or the lip bent inward, to interlock said edge guide of said linear rail, said lateral plates being provided on upper and lower ends with holes to mount at least two axles for installing rollers;
 - each said vertical member having further a segmental tube weld onto opposite face relative to guide channel, said segmental tube being provided with flanges to connect via bolts onto said horizontal spreader;
 - said horizontal spreader being a structural beam provided on either side with flanges to connect via bolts onto vertical members.
12. A strutting assembly as set forth in claim 11, wherein said upper plate and said lower plate are provided with holes to allow the connection of two or more said strutting assemblies via vertical extension members, said vertical extension members having at upper and lower ends contact flanges with holes for bolting.
13. A shoring panel as set forth in claim 1, wherein each said edge guide consists of a rectangular tube and a locking bar of round or rectangular section.
14. A shoring panel as set forth in claim 13, wherein said locking bar has either ends quasi flush to said rectangular tube and the center shifted inward at proportion comparable to diameter or width of said locking bar.
15. A shoring panel as set forth in claim 14 wherein said locking bar is partial relative to height of panel.